Group Leadership in Online Collaborative Learning

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Group Leadership in Online Collaborative Learning

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INTRODUCTION

Online collaborative learning emphasizes student activity and is associated with changes in perceptions of who is responsible for leading groups of learners. It raises questions about the roles of teachers and students as leaders. A teacher may act as the guide or as a member of the group and a co-learner. An important question is whether the success or failure of online collaborative learning depends on the role and skills of a group leader. There is reason to believe that online groups do need guidance, but there is a need to consider the extent to which instructors make students aware of their roles, and the degree to which they are tangibly present in an online environment.

A related issue is the skill set of the online leader, variously known as the online moderator, facilitator, coordinator, and so on, depending on his or her role. In actual fact, there may be different ways in which group participants contribute to leadership and numerous ways in which teams of teachers share responsibility for leading online groups. Group leadership should always be considered in the context of a range of factors that impact group dynamics. It is useful to be aware of the different philosophies that underpin online discussion and group working, the tasks in which learners engage, and the skills that instructors and students have or need to develop. Self-direction is a pivotal concept for the consideration of emergent leadership in online groups. Other important issues are leadership styles, social roles, relationships and norms, as well as the tools and media that may play a role in how collaboration is experienced by learners.

GOALS AND OUTCOMES OF COLLABORATION

Much has been written on the subject of collaborative learning, but it is not always clear what types of learning are taking place during or as a result of collaboration. A brief examination of terminology gives some insights. Panitz (1996) has considered the distinction between collaboration and cooperation. Collaboration is a personal "philosophy of interaction"; it suggests ways of dealing with people that respect their abilities and contributions. Collaborative learning has British roots, based on the work of teachers encouraging students to take a more active role in their learning, and ties into the social constructivist movement. There is an underlying premise of consensus building. On the other hand, cooperation, or cooperative learning, is a "set of processes" geared to the accomplishment of specific goals or to developing an end product. It is teacher centered, directed, and controlled. Cooperative learning has largely American roots, going back to John Dewey's writings on the social nature of learning. This tradition tends to focus on achievement or products of learning. One should also be aware that in the research literature the term "collaborative learning" may be used to describe something that would more accurately be named "cooperative." Dillenbourg and Schneider (1995) state that under the label "collaborative learning" most research actually focuses on learning through collaborative problem solving.

It is often assumed that students learn effectively through discussion and collaboration. Laurillard (2002) gives some examples of studies that have

shown benefits of computer-mediated communication (CMC) to students who have been part of thriving online communities. In addition to a "sense of community," these have brought opportunities for mutual support, for alternative perspectives and explanations, and to learn from the mistakes and insights of other students. But there are limitations. Although argument among students about a topic can be an extremely effective way of enabling them to find out what they know and do not know, "it does not necessarily lead them to what they are supposed to know" (Laurillard, 2002, p. 158). Laurillard concludes that discussion among students is an excellent partial method of learning, but that students need to be able to consult a tutor.

THE NATURE OF COLLABORATIVE TASKS

There are indications that a teacher's role in an online setting depends not only on the premise on which collaboration is established but also on the nature of the task. Online environments can encourage teachers to reconsider the tasks they set, for example in mathematics, moving away from textbook problems focused on producing "an answer," toward model-eliciting problems that focus on patterns, procedures, strategies or methods, addressed by groups of learners through collaboration (Nason & Woodruff, 2004). Rodriguez Illera (2001) explored tasks that have genuinely interdependent components, describing students who organized themselves into teams to produce a multimedia product. A complex activity of this kind requires negotiation of meanings. Activities that involve interdependence among those who carry out various sub-tasks raise the question of whether there is such a thing as a "group zone of proximal development (ZPD)." A group ZPD might be thought of as "the gap between what the group can realize on its own in relation to a specific task and what it can learn through the help of a tutor from outside the group" (Rodriguez Illera, 2001, p. 491).

Dillenbourg and Schneider (1995) claim that some tasks are inherently distributed, which means that group members work independently from each other, without sharing the process of reasoning. Other tasks are so straightforward that they do not leave any opportunity for conflict or disagreement or they rely on processes that are not open to introspection. A task can be modified to make it more suitable for collaboration, for example, by providing group members with partial data. Nevertheless, maintaining online discussion and collaboration can be challenging. Bonk, Wisher, and Lee (2004) have outlined some of the more common problems and solutions, addressing issues of task structure, how to set expectations, and practical tools for learners such as think sheets or question guides.

CRITICAL THINKING AND DEEP LEARNING

The nature and outcomes of online interactions have been examined by Newman, Johnson, Webb, and Cochrane (1997), who evaluated CMC in a group-learning context as a means of promoting deep learning and critical thinking in addition to surface information transfer. Having compared face-to-face seminars with asynchronous computer conferencing in the same class, they found evidence for critical thinking in both situations. However, the detail is important: the face-to-face seminars produced more spontaneous interaction, more new ideas and greater participation, but the computer conferencing encouraged a "worthier, more considered" style of interaction, leading to more important statements, and making it easier to link ideas together. In a similar vein, Armitt, Slack, Green, and Beer (2002) make a case for deep learning in a pilot course that made use of synchronous communication for case studies in occupational therapy. The authors claim that students who are used to working in groups, such as health care students undertaking problem-based learning, are used to taking advantage of opportunities for reflection in the process of interaction. Interestingly, their study suggests that students who have never met each other do not spontaneously collaborate in a peer group—instructors need to ensure at an early stage that learners understand their expectations regarding when and how to collaborate. Depth or quality of learning may therefore depend on how online collaboration is managed.

THE SKILL SET OF THE ONLINE INSTRUCTOR

Alongside typical teaching tasks, such as looking for gaps in knowledge or understanding and asking questions, teachers can use skills and strategies that are more specific to the online medium. Salmon (1997) has summarized techniques for CMC based on evidence from experienced moderators. Examples include using e-mail until a conference is established; providing daily news flashes; setting up sub-conferences if small interest groups emerge; archiving; and threading. Instructors can also appoint students as moderators. In her book published three years later, Salmon (2000) devotes a chapter to e-moderating qualities and roles. The desirable characteristics of online instructors are that they should be confident, constructive, developmental, facilitating, knowledge sharing, and creative. An online instructor also needs to be aware of a number of key issues that she or he will face: for example, dealing with the confusion that some students may experience online, and handling expectations in terms of teacher availability online. According to Cox, Clark, Heath, and Plumpton (2000), an online instructor should exhibit skills in weaving, summarizing, knowledge building, and managing off-topic contributions. The online group should be developed as a dynamic learning community, supported by activities that are intrinsically linked and build toward knowledge and concept learning. The authors also make a firm distinction between a facilitator and a moderator: "The main perception of moderator is control and power, whereas the key perception of facilitator is fellow learner with a unique role to coordinate the interaction" (Cox et al., 2000, p. 14).

From a practical angle, Bailey and Luetkehans (2001) have distilled their experience into a set of guidelines for facilitating team activities in online training. A first step is matching communication tools to specific activities: (1) knowledge construction, (2) skill development, (3) problem solving, and (4) motivation and attitude development. So, for example, a threaded discussion tool might be used to aid knowledge construction. Then, for each of the four categories of activity, the authors recommend a set of facilitation guidelines. As an example, to facilitate knowledge construction in a threaded discussion, a facilitator should provide scaffolding for the discussion, encourage learners to interact with one another and to build off each response, reward thoughtful contributions, and summarize key concepts for reinforcement. The facilitator should also remove obstacles to team learning by intervening when conflicts arise, discouraging personal criticism, and highlighting areas of common ground among team members. Schrum and Hong (2002) recommend online teaching strategies that include encouraging students to post an autobiography, frequent interaction with students, getting students to work collaboratively on their assignments and to benefit from feedback, establishing minimum levels of participation in a discussion, and promoting ongoing contributions to "reciprocal knowledge building."

For those who need help in putting such recommended strategies into practice, online environments offer new opportunities for collaborative teaching that can help them develop professionally as online instructors. Strohschen and Heaney (2001) recount their experiences of team teaching online; their collaboration gave them a certain freedom to try new methods and to risk failure, as they could rely on the other person to help out. They adopted an "interactive team" approach, in which they shared all responsibility and were present together in all online classes, becoming "co-discussants and co-learners" with their students.

STUDENT ROLES AND SELF-DIRECTED LEARNING

Are learners prepared to learn by themselves, and to determine their own path of learning, perhaps helped along by other group members? Or are they dependent on their teacher? French (1999) comments that students may be reluctant to switch to new roles and to adopt new styles of learning. However, she also notes that we have reached a point where "both the teacher and learner are simultaneously 'guides' and 'sages,' as all of us become continual learners and peer teachers adapting rapidly to changing information" (French, Hale, Johnson, & Farr, 1999, p. 13). In order to facilitate the transition, French has taken to making definitions of self-directed learning explicit to her students at the beginning of a course of study. Students are asked to think about the skills of self-directed

learning, such as self-reward, tolerating ambiguity, and helping peers learn.

One line of investigation is whether teams of students can fulfill all the "teaching presence" responsibilities of an effective online discussion leader. Rourke and Anderson (2002) have investigated a graduate-level online course in which groups of four students led online discussions. The research indicates that the peer teams fulfilled all the roles that the authors had identified as needing to be addressed: instructional design and organization, discourse facilitation, and direct instruction. The sharing of responsibilities could be seen as an advantage over what an individual teacher was able to offer. Students found discussions helpful in achieving higher order learning objectives but were of the opinion that they could have been more challenging and critical. Sharing out specific roles or responsibilities is also the concern of Collis and Meeuwsen (1999), who advocate using the "jigsaw method." In their online learning environment, students work in groups with a structured schedule of tasks; much of the time, students arrange their own work, and no instructor is present. Students are encouraged to ask one another for help. Instructors set up, structure, and monitor students' learning, but they do not have a highly visible role. A different approach is taken by Veerman, Andriessen, and Kanselaar (2000), who have focused on peer coaching among students learning through synchronous electronic discussion. "Best students" were selected to become peer coaches who would offer advice to other students in one of two ways: reflective (checking and linking arguments) and structural (considering opposite points of view). However, students seemed to need support to focus on meaning, rather than argumentation. Students also needed support to hold an overview, keep track of their discussions, and to organize their interface.

EMERGENT LEADERSHIP AND LEADERSHIP STYLES

Self-directed learning is perhaps easiest to observe when students spontaneously emerge as leaders from within the group. Yamaguchi, Bos, and Olson (2002) looked at groups working with different communication channels (face-to-face, videoconference, audioconference, or Internet chat room) and analyzed how these communication channels affected emergent leadership styles. The researchers maintain that small groups are more effective when they experience emergent leadership, which can be either dominant (task-focused) or more democratic (relationship-focused). Narrower computer-mediated channels, such as text chat, seem to inhibit relationship-focused leadership. Specific interventions could be used to help virtual teams develop relationship-focused self-management techniques, for example, through team building exercises, by using richer channels such as videoconferencing, or simply by setting aside more time for socialization.

The above contrast between task leadership and relationship-focused leadership is a common way of defining leadership styles. Task leaders are generally concerned with completion of tasks, accomplishment of goals, and group effectiveness. Relationship-focused, or socio-emotional, leaders are more supportive and concerned with group satisfaction, building trust, and maintenance of high quality relationships. Most leaders tend to exhibit behaviors from both styles—they are combination leaders. A combination leader works to accomplish group goals by making members effective and recognizing their value. To improve the group's performance, she or he is likely to involve members in the improvement process and in self-diagnosis of their own contribution. Dominant versus social interaction styles are also the focus of an analysis offered by Oren, Mioduser, and Nachmias (2002), who recognize that teachers find it hard to change their dominant role to that of moderators and facilitators of learning. As a result, students have insufficient opportunities to interact with one another and are not directed to develop their initiative and to make active contributions to the collaborative learning process. Online tutors should encourage a friendly and relaxed atmosphere and should offer a legitimate platform for messages that have social, rather than solely content significance.

This basic distinction between orientations towards tasks and relationships is also applied to the analysis of online group interactions. As noted by Maloney-Krichmar and Preece (2002), who have studied an online health community, even informal groups need both to achieve tasks and to maintain

relationships between members. The findings of Cho, Stefanone, and Gay (2002), who also analyzed community-based activities, show that social influences strongly affected the likelihood and the extent to which information was shared by peers. Online communities should also be aware of the effects of vocal groups, and the pressures they can create for members that do not wish to conform. Palloff and Pratt (1999) have remarked that if this is happening in an online classroom, students who are uncomfortable may stop contributing and even drop the course. Glazer (2002) notes that early work on the emotional content of CMC treated task-related and socio-emotional content as being separate. Today, it is being acknowledged that cognition and emotion are inextricably linked; a person may convey task-related information and emotional content using the same words or symbols.

THE INFLUENCE OF GENDER

The quality of collaborative learning may also depend partly on gender differences. Blum (1999) investigated gender differences in asynchronous learning in higher education, in terms of learning styles, participation barriers, and communication patterns. The research suggested that males control the online environment, and there were gender differences in the tone, style, and purpose of communication. Females showed a preference for connected learning, by asking questions, asking for help, and seemingly wanting to learn from other students. Blum concludes that a learning environment is needed that:

promotes and encourages collaborative learning for the female connected learner, but yet allows the male separate learner the freedom of learning in an abstract, autonomous manner. It also means that the professor in the CMC distance education environment must act as a facilitator who constantly looks for ways for the students to build a sense of community. (p. 58)

Yamaguchi et al. (2002) examined the influence of gender and found that in their experimental, competitive CMC task, female-only groups had lower levels of leadership, and female-majority groups also had lower levels of relationship-focused leadership. Several factors are involved, and it is possible that the self-reported data on leadership strategies may reflect women's tendency to underrate themselves in leadership.

NORMS OF BEHAVIOR IN GROUPS

An online course, community, or group typically adopts a set of rules for online interaction, otherwise known as netiquette. If participants can establish a group etiquette that allows for suggestions to be made and evaluated, then there is a chance that their performance will be more effective. Porterfield (2001) puts an emphasis on the creation of the right atmosphere:

Learning communities, like terrestrial communities, call for guidelines to promote positive interactions among community members. Such guidelines may be in the form of a code of conduct… The code of conduct will reflect the type of atmosphere or tone that the community wishes to create (p. 4).

Hammond (2000) makes the point that there is a steep threshold for learners to cross before they can establish online discussions: "They may more easily see the online forum as an environment for introductions and the occasional exchange of personal news, course information and essays rather than one that affords sustained communicative debate" (p. 260). There are strategic learners with little desire to engage in theoretical discussion, while those who are academically inclined may become frustrated by chat or a lack of academic rigor and focus. Instructors, therefore, need to explain to students what they are being asked to do and why, and students should be encouraged to take risks. Kear (2001) has looked at affective aspects of student interactions, and concluded that one characteristic that stands out is the supportiveness that students show for each other. They do this by using phrases like "hope this helps" and "sorry about spelling mistakes," and by writing messages emphasizing that students are "all in the same boat" in relation to course-related problems. "There certainly seemed to be supportive

'norms' established within the community," she concluded (Kear, 2001, p. 9).

TOOLS AND MEDIA IN ONLINE COLLABORATION

Does the choice of communication media, or even specific tools, affect learning and group dynamics, and have an impact on the role of the instructor? One focus of investigation is whether synchronous media facilitate student reflection. Armitt et al. (2002) have investigated synchronous collaboration in an online course in which health care students worked in groups to solve problems in patient case studies. The authors are convinced that students who are used to working on problem-solving tasks in groups, such as health care students, are capable of taking advantage of both synchronous and asynchronous media. Synchronous discussions allow immediate clarification and development of thoughts. However, deep learning in synchronous groups does not happen spontaneously throughout the course—it is promoted by online discussion of the course content, and instructors have an important role to play in setting out expectations. Social interaction and bonding between students are equally important. Many in-depth online discussions among students were peer-to-peer in the absence of the tutor, at later stages in the course, which the authors attribute to the students becoming more autonomous as learners within their subject area.

Both synchronous and asynchronous means of communication have been examined by Curtis and Lawson (2001), who found that personal e-mail, fax, telephone, and face-to-face meetings were used when a student disagreed with the contribution of another student; rather than express disagreement publicly through the online forum, critical comments were offered privately. Students also organized synchronous chat sessions. Various forms of online leadership were in evidence, organizing group work and initiating activities, and giving help and feedback.

E-mail puts online instructors in more direct contact with learners than is the case in group conferencing environments. This may give them the feeling that they are better able to influence processes and relationships. Woods and Keeler (2001) conducted a study into the effect of instructors' use of audio e-mail messages as a supplement to asynchronous text-based discussion. Short audio e-mail messages were sent to students at regular intervals; they paralleled or reinforced what was already communicated through textual messages, with a mixture of information and encouragement. The investigation did not confirm the researchers' assumptions that these messages would result in greater and better quality of student participation in discussion, as well as more favorable perceptions and level of satisfaction. However, individual comments from students give some support to the idea that audio e-mail messages make students feel closer to their instructor and that some students appreciate them, suggesting that further research is needed.

CONCLUSION

There is a multiplicity of roles available to online teachers and learners, and a wide range of skills that they should exercise and acquire. A picture emerges of an online instructor who is principally a facilitator, with a strong sense of what it means to help learners develop dynamic communities in which they can experience the best kind of learning. There is an onus on the online instructor to allow group members to emerge as leaders and to take on aspects of the teaching presence. However, this should be backed up by a heightened awareness of the structure of tasks, mechanisms of collaboration, and sensitivity to online group composition and dynamics, so that all participants are able to contribute. It is important to set expectations and to monitor the social and affective aspects of group dynamics. The online tutor is also cast as a fellow learner, but one who is able to lead others toward what they are supposed to know. Students can share leadership roles and responsibilities with a teacher or among members of a group. Group leadership can take the form of task-oriented initiating and organizing of activities, or relationship-focused help and feedback. As preparation for these roles, informal social bonding could be important. Just like instructors, students may need to acquire new skills in order to function well in online environments. When online activities are well designed and expectations have been set, students can have some good collaborative learning experiences without a

teacher. However, online collaborative groups still need leaders, and we know a good deal about what qualities they should have.

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KEY TERMS

Critical Thinking: In academic contexts, this phrase usually refers to complex intellectual reasoning that questions assumptions and seeks to assess evidence and examine claims made by others. More simply, it can also refer to logical thinking based on facts and evidence.

Deep Learning: This phrase characterizes an approach to learning, and it is contrasted with "surface" learning. Someone who adopts a deep learning approach may find the subject of study intrinsically motivating or very engaging.

Facilitator: A person who acts in such a way as to allow others to take an active role in learning, especially in groups. Teachers in this role typically assist students by asking probing questions and by stimulating discussion.

Moderator: A person who manages messages sent to a discussion forum, screening them and deciding whether any of them are inappropriate; also used to describe someone who has the role of directing an online discussion or presiding over a whole course.

Peer Coaching: Students are paired with a classmate or join a small group, with the aim of getting advice and support, and perhaps some instruction, from these fellow learners.

Self-Direction: The ability to carry out a learning activity without being directed or managed by another person, and specifically, a teacher. The term can also refer to the ability to set one's own learning goals.

Strategic Learners: Learners who adopt a strategic approach to learning are usually primarily interested in the grade or marks that they hope to achieve, and this determines what they focus on and how they study.

Teaching Presence: The ways in which a teacher is present, or input from a teacher, in terms of the design of online activities, facilitation of online interactions, and direction of learning.